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EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,251

Applicant(s)

CARROTT ET AL.

Examiner

Hussein Akhavannik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 5, line 35, "5,4;91,627" should be changed to "5,491,627".

On page 8, line 13, "preferably" should be changed to "preferable".

On page 9, line 18, "steps 56 and 62 of Fig. 2a)" should be changed to "steps 56 and 62 of Fig. 2a and 2b)" as step 62 is illustrated in figure 2b.

On page 9, line 24, "in step," should be changed to "in step 56 or 62" to correspond to the registration steps of figures 2a and 2b.

On page 9, line 30, "step 64 of FIG. 2a)" should be changed to "step 64 of FIG. 2b)" as step 64 is illustrated in figure 2b.

On page 12, line 34, "equa" should be changed to "equal".

Appropriate correction is required.

2. Claim 16 is objected to because of the following informalities:

Referring to claim 16, "at least on of" should be changed to "at least one of".

Appropriate correction is required.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "22" and "82" have both been used to designate the breast. Reference number "82" in figure 4 should be changed to "22".

Figure 7 is objected to because it is not included in the specification of this application. This figure is required in reply to this office action.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6, 7, 9, and 10 recite the limitation "said composite image" in claims 1 and 5.

There is insufficient antecedent basis for this limitation in the claims.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-3 and 5-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 and 7-9 of U.S. Patent No. 6,351,660 (herein Burke et al) in view of Yanagita et al (U.S. Patent No. 5,982,953).

Referring to claim 1,

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- i. Obtaining a first image of a region of tissue corresponds to claim 1a of Burke et al, as the first image corresponds to the image taken before the biopsy is performed.
- ii. Obtaining a second image of a region of tissue corresponds to claim 1b of Burke et al, as the second image corresponds to the image taken after the biopsy is performed.
- iii. Digitally storing the first and second images is not explicitly claimed by Burke et al. However, Yanagita et al explain digitally storing images in column 6, lines 35-40 and illustrate the image storing means in figure 1, as reference number 1. It is well known that images must first be stored before they are processed digitally. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to digitally store the first and second image.
- iv. Spatially adjusting at least one of the first and second digitized images to spatially register the images so that corresponding features in both images are mapped to corresponding positions is not explicitly claimed by Burke et al. However, Yanagita et al illustrate registration processing on the two images in figure 2, reference number S5. Yanagita et al explain that the position of the common radiographic object is registered between a plurality of frames in column 6, line 66 to column 7, line 13. In order to compare two images of an object effectively, it is well known that the two images must be located in the same region of an image. Otherwise,

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comparison techniques such as spatial difference measurements, masked difference measurements, and filtered difference measurements would not result in accurate comparison of the object at different times. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to spatially adjust at least one of the first and second digitized images so that corresponding features in both images are mapped to corresponding positions.

- v. Creating a derived image which visually emphasizes differences between the first and second images corresponds to claim 1c of Burke et al.

Referring to claim 2, this claim corresponds to claim 7 of Burke et al.

Referring to claim 3, this claim corresponds to claim 8 of Burke et al.

Referring to claim 5, this claim corresponds to claim 2 of Burke et al.

Referring to claim 6, this claim corresponds to claim 3 of Burke et al.

Referring to claim 7, this claim corresponds to claim 4 of Burke et al.

Referring to claim 8, this claim corresponds to claim 5 of Burke et al.

Referring to claim 9,

- i. Comparing an image intensity at a location in the first image with a respective intensity at a corresponding location in the second image is not explicitly claimed by Burke et al. However, Yanagita et al explain comparing the corresponding pixel values between two images in column 9, lines 12-16. The pixel values are representative of the intensity at a location in the first image and corresponding location in the second image.

In order to visually inspect the differences between two images of an object, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compare the corresponding portions of the two images.

- ii. Determining a difference image value based upon the difference between the image intensity at the location in the first image and the respective intensity at the corresponding location in the second image is not explicitly claimed by Burke et al. However, Yanagita et al explain, in column 9, lines 12-16, that the corresponding pixel values of the first and second image are subtracted from each other to create a subtraction image. In order to visually inspect the difference two images of an object, it is well known in the art to subtract the images from each other, leaving only the differences. Any portions of the image that remained unchanged between the images would be erased in the subtraction image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determining a difference image value based upon the difference between the image intensity values of the first and second image.

Referring to claim 10, this claim corresponds to claim 9 of Burke et al.

8. Claim 4 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 7-8 of Burke et al in view of Yanagita et al, further in view of Trezza (U.S. Patent No. 6,538,791).

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Referring to claim 4,

- i. Inputting the first and second images to an optical correlator is not explicitly claimed by Burke et al. However, Trezza illustrates inputting two images to an optical correlator in figure 1. The first image is the sample image (28) and the second image is the reference image (37). Trezza explains that an optical correlator would be extremely important in the medical field, especially in to determine the results of mammography because of high speed in column 1, lines 52-67. An optical correlator could be used in the cross correlation method claimed by Burke et al in order to speed up the processing or perform the cross correlations in real time. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to input a first and second image to an optical correlator to perform high speed cross correlation between the images.
- ii. Reading the correlation output from the output of the optical correlator is not explicitly claimed by Burke et al. However, Trezza illustrates reading the correlation from an optical correlator in figure 1 by the output correlation (30). In order to determine if the correlation between two images is above a predetermined level, as in the cross correlation method claimed by Burke et al, it would always be necessary to read the correlation output from the correlating device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

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was made to read the correlation output from the output of the optical correlator.

9. Claims 11-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 11-18 and 20-23 of Burke et al.

Referring to claim 11,

- i. Obtaining an earlier image of a region of tissue corresponds with claim 11a of Burke et al, as the earlier image would correspond to the image taken before the biopsy is performed.
- ii. Obtaining the later image of substantially the same region of tissue corresponds to claim 11b of Burke et al, as the later image is taken after the biopsy is performed.
- iii. Deriving a difference image that represents changes between the earlier and later images corresponds to claim 11c of Burke et al, where the earlier image corresponds to the pre-biopsy image and the later image corresponds to the post-biopsy image.
- iv. Combining at least one of the earlier and later images with the difference image, to produce a composite image corresponds to claim 11d of Burke et al.

Referring to claim 12, this claim corresponds to claim 12 of Burke et al.

Referring to claim 13, this claim corresponds to claim 13 of Burke et al.

Referring to claim 14, this claim corresponds to claim 14 of Burke et al.

Referring to claim 15, this claim corresponds to claim 15 of Burke et al.

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Referring to claim 16, this claim corresponds to claim 16 of Burke et al.

Referring to claim 17, this claim corresponds to claim 17 of Burke et al.

Referring to claim 18, this claim corresponds to claim 18 of Burke et al.

Referring to claim 19,

- i. Receiving the earlier and later images corresponds to claim 20a of Burke et al.
- ii. Register the earlier and later images by controlling an optical correlator to find a position of correlation between the earlier and later images corresponds to claim 20b of Burke et al.
- iii. Derive a composite image from the earlier and later images corresponds to claim 20c of Burke et al.
- iv. An optical correlator coupled to the image processor and arranged to correlate the earlier and later images and to output a cross correlation image, which is indicative of the position of correlation if the processed image corresponds to claim 20 of Burke et al.

Referring to claim 20, this claim corresponds to claim 21 of Burke et al.

Referring to claim 21, this claim corresponds to claim 22 of Burke et al.

Referring to claim 22, this claim corresponds to claim 23 of Burke et al.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. Claims 1 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanagita et al (U.S. Patent No. 5,982,953).

Referring to claim 1,

- i. Obtaining a first image of a region of tissue is illustrated by Yanagita et al in figure 2, reference number S1.
- ii. Obtaining a second image of a region of tissue is illustrated by Yanagita et al in figure 2, reference number S2.
- iii. Digitally storing the first and second images is illustrated by Yanagita et al in figure 1, reference number 1, as the image storage section. Yanagita et al explain that the image storage section is capable of digitally storing a plurality of frames of digital data in column 6, lines 35-40.
- iv. Spatially adjusting at least one of the first and second digitized images to spatially register the images so that corresponding features in both images are mapped to corresponding positions is illustrated by Yanagita et al in

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figure 2, reference number S5. Yanagita et al explain that the position of the common radiographic object is registered between a plurality of frames in column 6, line 66 to column 7, line 13.

- v. Creating a derived image that visually emphasizes differences between the first and second images is illustrated by Yanagita et al in figure 2, reference number S8. Yanagita et al explain that the two images are subtracted from each other after registration to create a subtraction image in column 9, lines 12-22.

Referring to claim 9,

- i. Comparing an image intensity at a location in the first image with a respective intensity at a corresponding location in the second image is explained by Yanagita et al in column 9, lines 12-16. The pixel values are representative of the intensity at a location in the first image and corresponding location in the second image.
- ii. Determining a difference image value based upon the difference between the image intensity at the location in the first image and the respective intensity at the corresponding location in the second image is explained by Yanagita et al in column 9, lines 12-16. The corresponding pixel values of the first and second image are subtracted from each other to create a subtraction image.

Referring to claim 10, the composite image visually emphasizing image differences by representing various regions of the composite image in synthetic colors, based upon image

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differences between the first and second images is explained by Yanagita et al in column 13, lines 19-25. By changing the hue depending on the difference value, the difference values would be represented by different colors.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Kawachi et al (U.S. Patent No. 6,285,787).

Referring to claim 2,

- i. Determining a coordinate transformation which produces at least a pre-determined degree of correlation between the first and second images is not explicitly explained by Yanagita et al. However, Kawachi et al do explain performing cross-correlation between two images until a pre-determined degree of correlation is obtained in column 7, lines 7-13 and illustrated in figure 8. The model image is shifted across the region measurement image until the reference value is exceeded. Therefore, the shift value of the model image at the point where the reference value is exceeded will represent the alignment amount necessary to register the two images. The cross-correlation method of Kawachi et al could be implemented in the registration processing of Yanagita et al so that two

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images can be registered correctly. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine a coordinate transformation to produce a pre-determined degree of correlation between two images when aligning the images.

- ii. Applying the coordinate transformation to at least one of the first and second digitized images to align the images is explained by Yanagita et al in column 6, line 66 to column 7, line 13.

Referring to claim 3,

- i. Applying a plurality of coordinate transformations to one of the first and second digitized images, to obtain a plurality of corresponding adjusted images is not explicitly explained by Yanagita et al. However, Kawachi et al do illustrate applying a plurality of coordinate transforms to the model image (27q) in figure 8. The model image is shifted across the measurement region image sequentially. Each shift of the model image corresponds to a different coordinate transform of that image. When aligning two images, it is always necessary to shift one image in relation to the other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a plurality of coordinate transformations an image being aligned with another image.
- ii. Cross-correlating the adjusted images with one of the first and second digitized images to produce a correlation output corresponds to claim 2i.

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At every shifted position, the model image is correlated with the measurement region image.

- iii. Selecting a coordinate transformation which produces at least a defined correlation output from its corresponding adjusted image corresponds to claim 2i. The predefined correlation value is illustrated by Kawachi et al in figure 8 as the reference value.

Referring to claim 5, recording the derived image for archiving is illustrated by Yanagita et al in figure 1 by the image memory (7), which can store the output images of the image processing section (5).

Referring to claim 6, storing the composite image on a computer recordable medium is illustrated by Yanagita et al in figure 1 by the image memory (7), which stores the output images of the image processing section and can be read by a computer.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Kawachi et al, further in view of Wang (U.S. Patent No. 6,477,262).

Referring to claim 7, printing an image based on the composite image is not explicitly explained by Yanagita et al or Kawachi et al. However, Wang does illustrate printing an image in figure 1 by the laser film printer (580). Printing to image in order to archive it is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to print an image based on the composite image of Yanagita et al.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Kawachi et al, further in view of Mitchell et al (U.S. Patent No. 5,433,202).

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Referring to claim 8, at least one of the first and second images being three-dimensional is not explicitly explained by Yanagita et al or Kawachi et al. However, Mitchell et al do explain producing three dimensional mammography images in column 10, lines 16-22. Producing three-dimensional images of biological tissue is well known in the art of medical imaging to provide a more accurate representation of the tissue being imaged. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce three-dimensional breast images.

16. Claims 4 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Kawachi et al, further in view of Trezza (U.S. Patent No. 6,538,791).

Referring to claim 4,

- i. Inputting the first and second images to an optical correlator is not explicitly explained by Yanagita et al. However, Trezza illustrates inputting two images to an optical correlator in figure 1. The first image is the sample image (28) and the second image is the reference image (37). Trezza explains that an optical correlator would be extremely important in the medical field, especially in to determine the results of mammography because of high speed in column 1, lines 52-67. An optical correlator could be used in the cross correlation method of Kawachi et al in order to speed up the processing or perform the cross correlations in real time. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to input a first and second image to an

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optical correlator to perform high speed cross correlation between the images.

- ii. Reading the correlation output from the output of the optical correlator is not explicitly explained by Yanagita et al. However, Trezza illustrates reading the correlation from an optical correlator in figure 1 by the output correlation (30). In order to determine if the correlation between two images is above a predetermined level, as in the cross correlation system of Kawachi et al, it would always be necessary to read the correlation output from the correlating device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to read the correlation output from the output of the optical correlator.

Referring to claim 19,

- i. Receiving the earlier and later images corresponds to claim 1i-ii.
- ii. Register the earlier and later images by controlling an optical correlator to find a position of correlation between the earlier and later images is not explicitly explained by Yanagita et al or Kawachi et al. However, Trezza does illustrate using an optical correlator to find the correlation between two images in figure 1. Such a correlator could be used in the cross correlation method of Kawachi et al to determine the coordinate transform which produces at least a predetermined degree of correlation to register the two images in high speed or real time. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

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made to register the earlier and later images by controlling an optical correlator.

- iii. Derive a composite image from the earlier and later images corresponds is illustrated by Yanagita et al in figures 22-24.
- iv. An optical correlator coupled to the image processor and arranged to correlate the earlier and later images and to output a cross correlation image which is indicative of the position of correlation corresponds to claim 4.

Referring to claim 20, computing differences between the earlier and later images and emphasizing the differences in the composite image corresponds to claim 10.

Referring to claim 21, permitting a user to view the composite image on a display is illustrated by Yanagita et al in figure 1 as the image display section (6).

17. Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Kawachi et al and Trezza, further in view of Wang.

Referring to claim 22, an ultrasonographic imaging system, arranged to communicate ultrasonographic image data to the image processor to provide at least one of the earlier and later images is not explained by Yanagita et al, Kawachi et al, or Trezza. However, Wang does explain acquiring mammography images using ultrasound in column 7, lines 18-44. Using ultrasound imaging systems to acquire images of biological tissue is well known in the art and could be substituted for the imaging system of Yanagita et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to an ultrasonographic imaging system to acquire images.

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18. Claims 11-13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Gur et al (U.S. Patent No. 5,627,907).

Referring to claim 11,

- i. Obtaining an earlier image of a region of tissue corresponds to claim 1i.
- ii. Obtaining the later image of substantially the same region of tissue corresponds to claim 1ii.
- iii. Deriving a difference image, which represents changes between the earlier and later images, corresponds to claim 1iii.
- iv. Combining at least one of the earlier and later images with the difference image, to produce a composite image is illustrated by Yanagita et al in figures 22-24. The images corresponding to mammography images is not explicitly explained by Yanagita et al. However, Gur et al do explain creating a difference between two mammography images in column 9, lines 22-36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mammography images of Gur et al as opposed to the chest images of Yanagita et al as they can be easily substituted for each other to determine changed in the region over time.

Referring to claim 12, this claim corresponds to claim 5.

Referring to claim 13, this claim corresponds to claim 6.

Referring to claim 16, spatially adjusting at least one of the earlier and later images to aid in registering the images corresponds to claim 1iv.

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19. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Gur et al, further in view of Wang.

Referring to claim 14, this claim corresponds to claim 7.

20. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Gur et al, further in view of Mitchell et al.

Referring to claim 15, this claim corresponds to claim 8.

21. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita et al in view of Gur et al, further in view of Kawachi et al.

Referring to claim 17, this claim corresponds to claim 2.

Referring to claim 18, this claim corresponds to claim 3.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Murthy et al (U.S. Patent No. 6,453,058) – To exhibit detecting changes between two mammography images and creating a difference image.

Schneider (U.S. Patent No. 6,310,477) – To exhibit of lesions and tumors in 3D mammography images by registering the images and creating difference images.

Vilsmeier (U.S. Patent No. 6,484,047) – To exhibit detecting tissue changes by registering the images and creating difference images.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

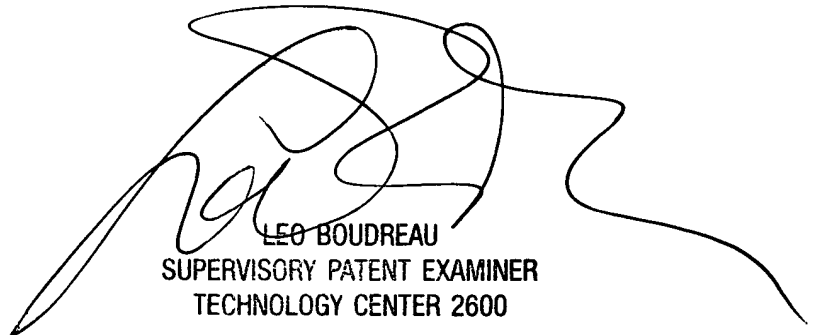
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Hussein Akhavannik
April 3, 2003

A.A.



LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600